

Abstract of the Disclosure

Multiple electrical signals (from, for example, multiple signal sources such as antennas) are converted by an electrical signal input (24) into corresponding optical signals. In one embodiment these electrical signals are comprised of temporally separated data elements. In this case, in a preferred embodiment, the optical signals mirror these temporal conditions. In addition, in a preferred approach, the optical signals are physically grouped such that temporally coincident data elements from each of the multiple electrical signals are positioned proximal to one another. The resultant optical signals are then correlated, in parallel, with a correlation reference (26) by an optical correlator lens (25). In one embodiment, the optical signals are subjected to a Fourier transformation (31) and distorted (32) as necessary to normalize these resultant optical signals with the correlation reference (26). The optical correlation then occurs in the Fourier domain.